Innovative Teaching Design of Topology based on Information Technology

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Abstract

Information technology as a means of teaching has gradually integrated into the curriculum, and the corresponding teaching design is also closely followed. The ability training of undergraduate students in mathematics should be permeated in the classroom teaching, and the use of rich Internet to collect mass teaching resources can effectively promote the enthusiasm of students' learning, which is beneficial to the formation of students' innovative consciousness and practical ability. This paper discusses the innovative teaching design of topology.

Keywords: Information technology; topology; innovative

1. Introduction

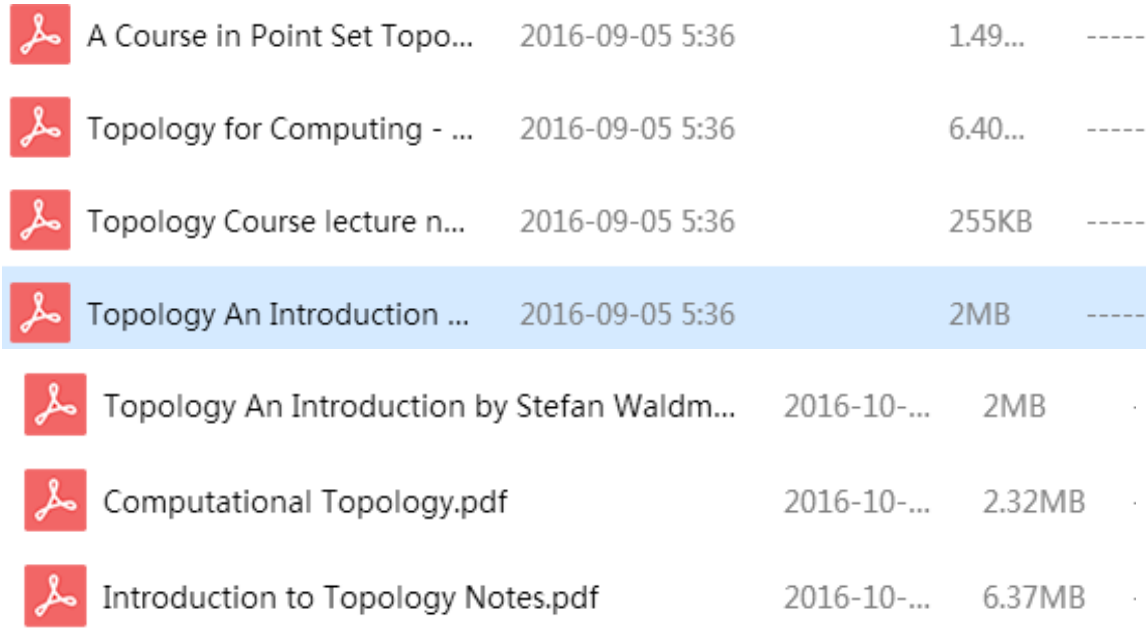
"Topology" is different from other courses in mathematics, such as mathematical analysis, higher algebra, differential equation and other courses, has almost no content, logic, and abstract content, and the basic concepts of it are much more. "Topology" is more difficult for learners. In the textbook, after introducing some concepts, it is often followed by a series of theorems and verbose proofs. Examples are few, and the examples in the textbook are also abstract. In the classroom, we should adopt more questions, check, dredge and feedback in time. To prepare lessons carefully before class, make courseware, grasp the key and difficult points in the teaching materials, and actively search for materials related to the teaching materials to help students understand every problem and difficulty. In class, we should teach carefully in class, seize the key points, highlight the difficulties and elaborate the practice, use a variety of teaching methods, start from the knowledge level of the students, strive to cultivate the students' interest in learning, arouse the enthusiasm of the students, and maximize the democracy in the classroom, create a lively atmosphere, let the students think happily and actively explore. Ask, dare to challenge, dare to be new. In the teaching, we should pay attention to the combination of theory and practice, pay attention to the practical problems encountered in the practice of the students, explain the problems in theory, and put forward the methods and measures to solve them, and actively cultivate the students' ability to do it.

2. Instructional design

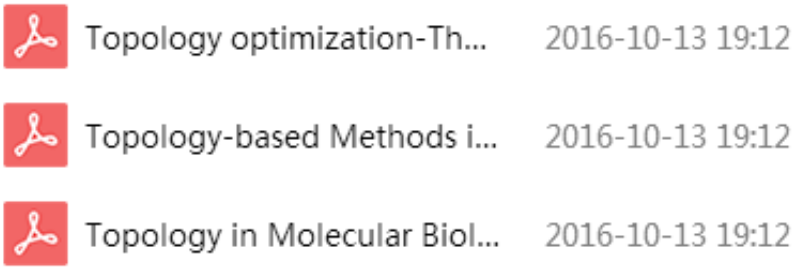
Because most of the students in mathematics are motivated to study and continue to study, the innovation of these students is mainly in the innovation of professional knowledge, that is, to write scientific research

papers. At the same time, the concepts, theories and methods of topology have been widely permeated into many fields of modern mathematics, natural science and social science, and have an increasingly important application. Therefore, the basic knowledge of learning point set topology can not only provide necessary basic knowledge for learning modern mathematics, but also from higher view. Point to observe and analyze the contents of mathematics, deepen the understanding and understanding of these contents. According to the characteristics of the course of topology, in the course of preparing the lesson, not only the content of the textbook is carefully prepared, but also the relevant literature of the course is searched and collected. The concrete measures are as follows:

1. In order to facilitate communication, every course of the semester first establishes the QQ group before class.
2. In order to improve students' professional English level, we collected and uploaded foreign electronic English textbooks related to topology in QQ group (a few screenshots are listed below).



3. In order to enhance students' understanding of the application of topology, collect and publish the literature on topology application related to this course in QQ group(a few screenshots are listed below).



In order to improve the students' innovation and the writing ability of scientific and technological papers, in the course of preparing lessons, collect and upload the literature on theoretical innovation related to the content of the course at any time, guide the students to find innovative ideas, and continue to innovate and write the papers in combination with the literature of the application.

3. Conclusion

On the basis of the above measures, at present, a number of subjects have been declared and completed in school level teaching and reform. "Analytic geometry" course has been rated as a provincial-level excellent course, and more than 10 articles related to "topology" are written and published for students majoring in mathematics and Applied Mathematics in their spare time.

7. References

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